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Energy
Board

ENVIRONMENTAL GUIDELINES FOR THE CONSTRUCTION AND OPERATION OF HYDROCARBON PIPELINES IN ONTARIO

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1984

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TABLE OF CONTENTS

Section			Page
1.0	INTRODUCTION		
	1.1	The Ontario Energy Board	1
	1.2	The Ontario Pipeline Coordination Committee	2
	1.3	Landowners and The General Public	5
	1.4	Environmental Report Review Procedures	6
2.0	DATA TO BE FILED		
	2.1	General Environmental Information	9
	2.2	Mapping and Description of Environment	10
	2.3	Specifications and Schedules	14
	2.4	Right-of-Way	16
3.0	ROUTE SELECTION		
	3.1	General Planning Procedures for Route Selection	19
	3.2	Agricultural Lands	20
	3.3	Archaeological and Man-Made Heritage Sites	21
	3.4	Forest and Flora	22
	3.5	Geological Features and Mineral Resources	23
	3.6	Land Use Planning Considerations	23
	3.7	Parks and Areas of Outdoor Recreation and Education	25
	3.8	Watercourse Crossings and Lakes	26
	3.9	Wildlife	27
4.0	CONSTRUCTION		
	4.1	Inspection	29
	4.2	Access and Fencing	30
	4.3	Clearing, Grading and Blasting	30
	4.4	Roads and Camps	31
	4.5	Equipment Fueling, Noise and Dust Control	32
	4.6	Landscape Protection	33
	4.7	Soil and Drain Protection	34
	4.8	Forest Protection	37
	4.9	Fish and Wildlife	38
	4.10	Crossings of Lakes and Watercourses	38
	4.11	Hydrostatic Testing	43
	4.12	Restoration	44
5.0	ECONOMIC, SOCIAL AND SAFETY CONSIDERATIONS		
	5.1	Economic and Social Considerations	47
	5.2	Safety Considerations	47
	5.3	Monitoring	49

FIGURES

Figure	1	Schematic of Study Development Leading to Leave to Construct Application before the Ontario Energy Board	3
Figure	2	OPCC Environmental Report Review Process	8

APPENDICES

Appendix I	Some Legislation Applicable to Pipeline Construction Projects in Ontario	

FOREWORD

These Guidelines have been prepared under the direction of the Ontario Pipeline Coordination Committee (OPCC).

The Guidelines are designed primarily to assist hydrocarbon pipeline utilities in protecting the environmental resources of Ontario. A section on economic, social and safety considerations is included to emphasize certain matters which impact on the general public. In addition, the Guidelines are intended to provide advice to landowners and other interested parties as to what they should reasonably expect from pipeline applicants.

These Guidelines do not create new regulations or law, nor do they conflict with present ones. While certain references to legal requirements are noted, these references do not exempt the applicant from any other statutory requirements. A list of some environmental legislation applicable to pipelines is included in Appendix I.

Section 1 of the Guidelines outlines the roles and procedures of the Ontario Energy Board (OEB), the OPCC, and certain participating Ontario Government Ministries. Sections 2, 3, 4 and 5 outline the information requirements for the Environmental Report and the data to be filed for approval to construct a pipeline.

Applicants, landowners and other interested parties are encouraged to contact the Chairman of the OPCC, c/o Ontario Energy Board, 9th Floor, 14 Carlton Street, Toronto, Ontario M5B 1J2, (416) 598-4000 for clarification of any information contained in these Guidelines.

ENVIRONMENTAL GUIDELINES FOR THE CONSTRUCTION AND OPERATION OF HYDROCARBON PIPELINES IN ONTARIO

SECTION 1.0 - INTRODUCTION

1.1 The Ontario Energy Board

The procedures of the Ontario Energy Board (OEB) are governed by the Ontario Energy Board Act R.S.O. 1980, c.332. The OEB has jurisdiction, upon receiving applications, to authorize the construction of hydrocarbon-transmission pipelines and related facilities within the Province of Ontario, and to authorize expropriation of land, if required, for the purpose of such pipelines and facilities. Authority may be granted when the OEB is of the opinion that the construction or expropriation "is in the public interest."

When considering Leave to Construct Applications, the OEB conducts public hearings. In arriving at its decision as to whether the application is in the public interest and therefore should be granted, the OEB takes into consideration numerous factors including the physical and economic feasibility of the project and the employment of suitable construction, engineering and land-restoration methods. A schematic diagram, on page 3 (Figure 1), outlines engineering and environmental study development prior to submission of a Leave to Construct Application to the OEB. During review of the application, the OEB will also consider the rights and concerns of affected landowners and the protection of the environment.

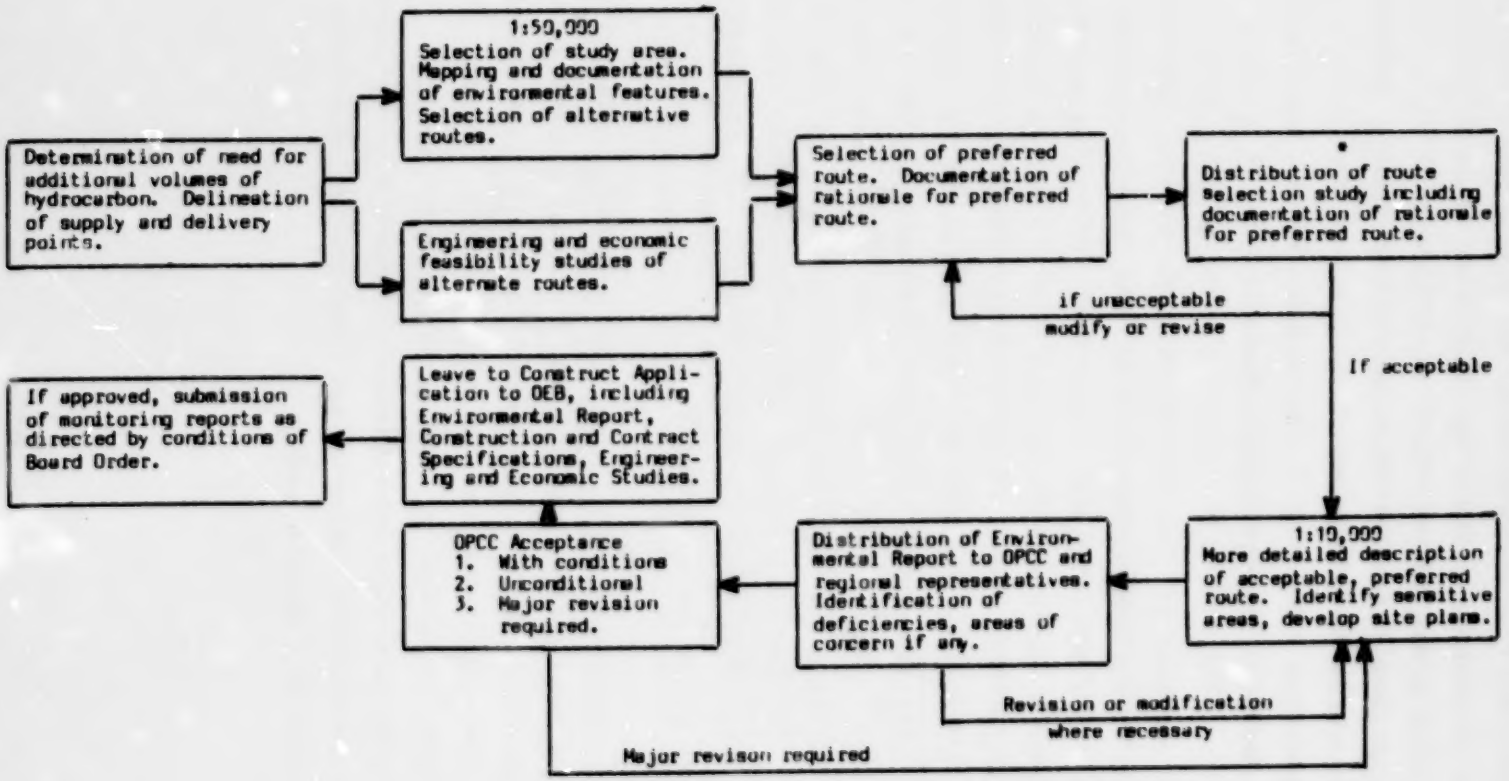
The policy of the OEB is to set a hearing date after all relevant information has been provided by the applicant and reviewed by the Ontario Pipeline Coordination Committee (OPCC). Environmental information should be made available to the OPCC at least sixty days before the desired hearing date to allow for a multi-Ministerial review. For additional information regarding this review see section 1.4.

The OEB expects an applicant to comply with these Guidelines wherever practicable, before, during and after construction. Where the applicant considers that strict adherence to the Guidelines will not be practical or in the public interest, the applicant will be required to establish this to the satisfaction of the OEB. Any order or directive of the OEB takes precedence in the event that the Guidelines conflict with or appear to be incompatible with the order.

1.2 The Ontario Pipeline Coordination Committee

The purpose of the OPCC is to minimize the undesirable impacts of the construction and operation of hydrocarbon pipelines and facilities in Ontario. The OPCC is chaired by a representative of the OEB and includes representation from the Ministries of Agriculture and Food (AGF), Energy, Environment (MOE), Consumer and Commercial Relations (CCR), Natural Resources (MNR), Citizenship and Culture (MCC), Municipal Affairs and Housing (MAH), Transportation and Communications (MTC) and when required, the Niagara Escarpment Commission. For clarification of the mandates of these Ministries, interested parties are encouraged to contact the Chairman of the OPCC.

Figure 1
SCHEMATIC OF STUDY DEVELOPMENT LEADING TO LEAVE TO CONSTRUCT APPLICATION BEFORE THE ONTARIO ENERGY BOARD


Determination of need for additional volumes of hydrocarbon. Delineation of supply and delivery points.
1:50,000
Selection of study area. Mapping and documentation of environmental features. Selection of alternative routes.
Engineering and economic feasibility studies of alternate routes.
Selection of preferred route. Documentation of rationale for preferred route.
Distribution of route selection study including documentation of rationale for preferred route.
if unacceptable
modify or revise
If acceptable
1:10,000
More detailed description of acceptable, preferred route. Identify sensitive areas, develop site plans.
Distribution of Environmental Report to OPCC and regional representatives. Identification of deficiencies, areas of concern if any.
Revision or modification
where necessary
OPCC Acceptance
1. With conditions
2. Unconditional
3. Major revision required.
Major revison required
Leave to Construct Application to OEB, including Environmental Report, Construction and Contract Specifications, Engineering and Economic Studies.
If approved, submission of monitoring reports as directed by conditions of Board Order.

• Depending on magnitude of project, distribution of map (1:20,000) showing study corridor and alternate routes is sufficient.

Experience has shown that the OPCC can achieve its purpose through a combination of:

- extensive consultation, prior to the formal application and hearing;
- review of the Environmental Report (this Report is the document containing all the environmentally related information, including maps);
- assistance to the OEB or intervenor's counsel during the hearing; and
- inspection during construction and monitoring of the post construction phase.

The OPCC review of the Environmental Report includes distribution to and feedback from the local representatives of the Ministries. The OPCC then coordinates the interests and concerns of the Ministries as expressed by their OPCC representative. In effect, the OPCC provides a "single window" for the applicant to identify Provincial concerns. The OPCC approach is consultative rather than adversarial. In this way, every attempt is made to resolve concerns prior to the OEB hearing. If matters cannot be resolved prior to the hearing, the OPCC assists Board counsel in presenting Provincial concerns to the OEB.

Following approval of the application, the OPCC inspects construction activities to ensure compliance with conditions of the OEB order and with commitments made by the applicant in the Environmental Report and during the hearing. The longer-term impacts of construction are assessed through review of, and comment on, monitoring reports as required in OEB orders (see section 5.3 Monitoring).

1.3 Landowners and the General Public

1.3.1 The interests of landowners, farmers, mining claim holders, conservation and recreational authorities and local municipal governments are extremely important in developing the final route for the proposed location of a pipeline. Consequently, the applicant should inform these parties of pipeline construction plans and alternate routes that are being considered. The applicant should report on the status of discussions with these parties and plans for acquisition of easements, when the application is filed with the OEB.

1.3.2 It is recommended that the proposed easement be roughly staked as early as possible. If this is not feasible, then the affected landowners should be shown the route location through their property using aerial photographs. This should be done prior to the OEB hearing. Landowners and other interested parties will then be aware of the probable impact of the proposed pipeline on their properties and be able to determine if their intervention at the OEB hearing is necessary. If the application is approved by the OEB, the schedule of construction for each section of the pipeline shall be finalized and given to the landowner and made available to other interested parties at least seven days prior to the commencement of construction.

1.4 Environmental Report Review Procedures

As indicated in section 1.1, information relating to these Guidelines should be submitted to the OPCC at least 60 days before the desired hearing date for each application. Pre-submission consultation with OPCC members and local government representatives will expedite the review process. A current list of local government and OPCC contacts will be provided to the applicant upon request.

Identification of persons contacted, dates of contacts, concerns of parties contacted, status of the resolution of their concerns and any approvals received should be included as an appendix to the Environmental Report. This will help to further expedite the review process.

Sufficient copies of the Environmental Report shall be submitted to the Chairman of the OPCC to allow for distribution to the OPCC members and the local ministry offices in affected areas for their input in the review process. Upon completion of this review, an OPCC meeting will be held to resolve any conflicting concerns between Ministries or to discuss deficiencies in the Report. If no serious complications arise from review of the Report, the coordinated, interministerial review should normally be completed in 45 days. An outline of the OPCC Environmental Report review process is provided on page 8 (Figure 2). The applicant is encouraged to contact any member of the OPCC or local government representative during the review to discuss problem areas.

After review of the Report is complete, the Chairman of the OPCC will advise the applicant in writing regarding:

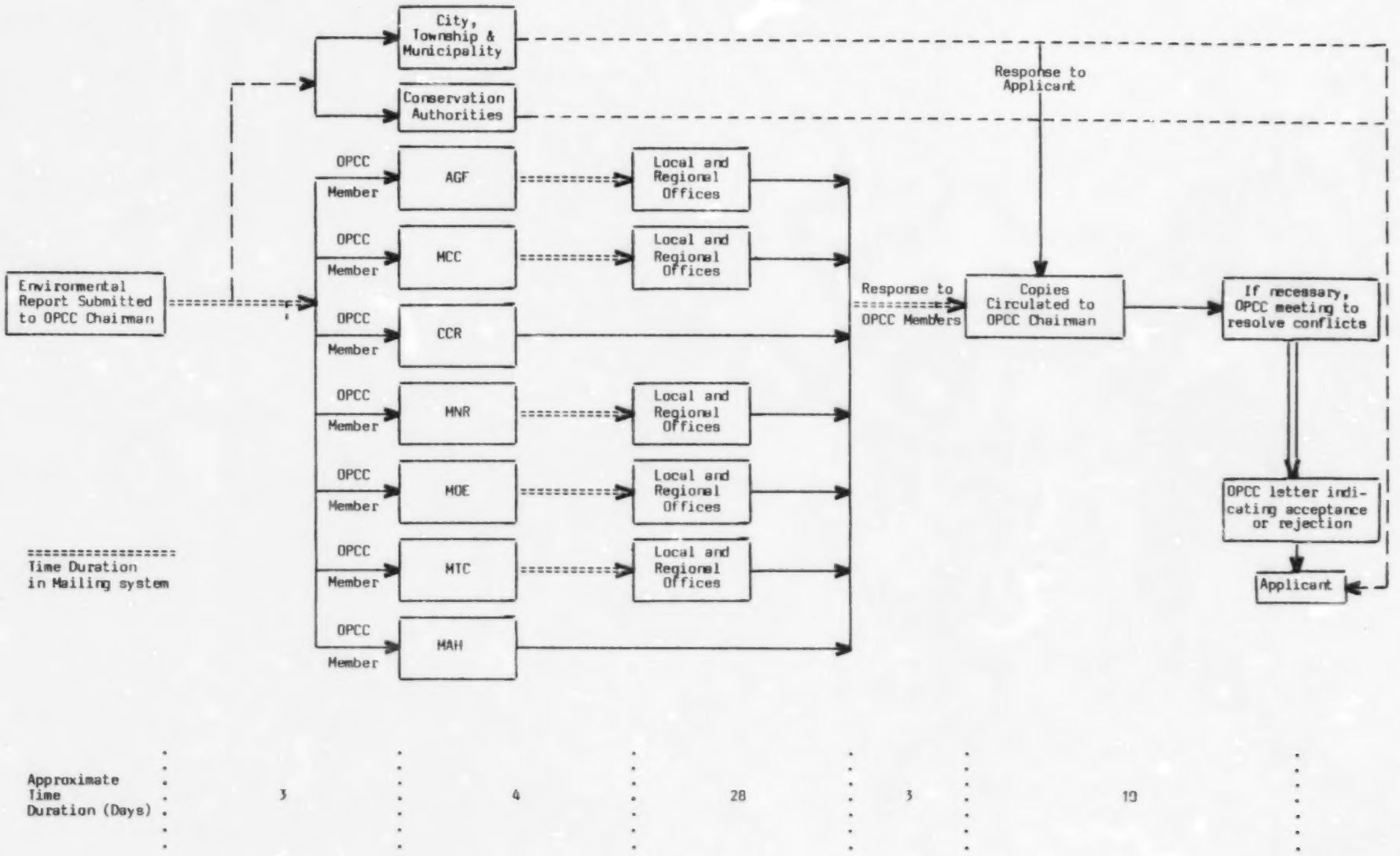
(a) acceptance of the Environmental Report, or

(b) acceptance of the Report subject to conditions, or

(c) rejection of the Report until additional information is supplied or the Report is revised.

The applicant is encouraged to contact the Chairman of the OPCC if clarification is required on Report review procedures.

Figure 2
OPCC ENVIRONMENTAL REPORT REVIEW PROCESS



2.0 DATA TO BE FILED

2.1 General Environmental Information

This section of the Guidelines identifies the data that should be included in the Environmental Report accompanying a Leave to Construct Application. The onus rests with the applicant to achieve a reasonable balance between cost and cosmetic features of the Report.

The Environmental Report must include a written description of the environmental features and processes within the study area. The level of detail of this information will vary with the environmental sensitivity of the site and the diameter, pressure and location of the proposed line. The level of detail will become greater as alternate routes are discounted, with the preferred route having the most detail. The Environmental Report should address the following items:

(i) the overall need or rationale for the facilities;

(ii) a description of the proposed facilities;

(iii) a description of the environment prior to construction;

(iv) a description of the predicted environmental impacts occurring in all phases of project development;

(v) alternatives to the project;

(vi) contingency plans for unforeseen environmental conditions;

(vii) a description of mitigative measures and their cost; and

(viii) the rationale in support of the preferred route and specific mitigative measures relating to the alternatives considered.

The narrative description of the resource features should be done in conjunction with the mapping as outlined in section 2.2. In addition, identification of areas where problems are anticipated and an outline of mitigative techniques should be included. Some mitigative options are identified in section 4.0, Construction.

Site plans for sensitive water crossings at a scale of 1:5,000 or larger are also necessary. These proposed plans should indicate the location of staging areas for equipment, locations of any diversions, sediment traps, flumes, etc. Any monitoring programs including sampling, should be included in the Environmental Report (see section 5.3, Monitoring). Permits required or received for the construction phase of the project must also be included in the Environmental Report.

2.2 Mapping and Description of Environment

The application to the OEB for Leave to Construct a pipeline or facility should include in the Environmental Report maps or recent air photomosaics which illustrate the environmental setting of the proposed pipeline route.

For large-diameter, high-pressure pipelines crossing private lands, the above information should be shown at a scale of 1:10,000 or larger. A larger scale map, photomosaic or site construction plan of environmentally sensitive areas is preferable.

For smaller-diameter, lower-pressure pipelines located within existing rights-of-way (ROW), a scale of 1:20,000 is sufficient. However, a larger scale map, aerial photograph or site plan is preferable for environmentally sensitive areas such as stream crossings. In some cases a description of certain environmental features may be unnecessary. For example, a field soil survey would not be required if the site is in an existing ROW and has been previously disturbed. Many environmental features applicable to cross-country routes would be absent if the ROW has been previously cleared.

The following features should be identified on the maps or photomosaics if they are traversed by, or adjacent to the proposed route:

2.2.1 Facilities

Proposed general route location and alternate routes considered. Location of existing and proposed compressor and pump stations, valve and metering stations and line valves.

2.2.2 Agricultural Resources

Soil capability for agriculture as defined in the "Canada Land Inventory Soil Capability System", (CLI), Classes 1-7, and a soil map describing such

soil characteristics as, but not limited to, texture, drainage, slope, stoniness and depth to bedrock.

Agricultural land use such as crops, dairying, mixed farming, grazing, livestock, poultry, fruit, vegetables and other specialty crops.

2.2.3 Geological Resources

All important or sensitive landforms and geological features including any mineral deposits, mines or mining claims including identified aggregate resources, oil and gas pools and wells or fields in close proximity to the proposed route.

2.2.4 Hydrology

The quality and flow regime of water resources in the study area from all significant sources including: reservoirs, water courses, recharge areas, intake and discharge points of water for municipal and private water supplies, sewage treatment, storm drainage, rivers, streams, lakes, ponds, wetlands, water wells, and municipal drains.

2.2.5 Land Use

Existing land uses including all utilities, waste disposal sites, established recreation areas and areas used for outdoor education such as wildlife management areas, fish sanctuaries, national and provincial parks and conservation areas, and occupied and vacant buildings. Land tenure and

ownership as well as unregistered forms of tenure, such as land use permits and staked mining claims.

Proposed land uses including residential, commercial, recreational, industrial and institutional as designated in approved municipal official plans and/or zoning by-laws, especially when different from existing uses.

2.2.6 **Topographic Information**

Topographic information outlining surface contours, geographical distribution of marshes, wetland resources and organic soils and areas known to be subject to physical hazards such as landslides, mudflows, earthquakes, and slope instability.

2.2.7 **Vegetation**

Forest resources such as forests and woodlots, shelter and other protection belts, seed production stands, agreement forests and crown lands publicly or privately managed. All important or sensitive floral and faunal areas including ungulate wintering yards.

2.2.8 **Miscellaneous**

Any other information referred to in other sections of these Guidelines, which may be pertinent to the instruction of the contractor or the success of the project.

2.3 Specifications and Schedules

2.3.1 Construction and Contract Specifications

In addition to filing the standard construction techniques and procedures that will be used, the applicant should outline the process whereby construction crews will be informed of the recommendations made in the Environmental Report, and constrained to comply with those recommendations.

Accordingly, the applicant should include the following in the contract specifications to which the contractor is committed:

(i) Vegetation along the ROW which will be affected by the construction, the construction procedure to be used, the method of restoration, seeding mixes, application rates and locations to be revegetated should be described.

(ii) Site-specific plans of each sensitive watercourse and wetland crossing should be included, along with the approval in writing by the MOE, MNR and the local conservation authoritiy, at least 30 days in advance of any construction. The plans should specify the vegetation to be removed, the crossing method and the restoration procedure, as well as locations where fording will be allowed, sources of water for hydrostatic-testing purposes and trench water discharge areas.

(iii) All slope-stabilization procedures should be described, including temporary stabilization as required and riverbanks which will be rip-rapped or hydroseeded.

(iv) Specialized equipment required for specific areas should be listed, such as a brush blade or subsoiler.

(v) The location of any new access roads or borrow pits, which will be used by the applicant and any areas planned for work camps, storage, or other such purposes should be identified.

(vi) Any special techniques to be used in the handling and restoration of agricultural soils should be identified and explained.

The applicant is required to file the contract specifications with the application to the OEB.

2.3.2 **Scheduling**

The proposed construction schedule is required. This would include items such as:

- Project time schedule with reference to periods of fish spawning and season of construction as well as daily time schedule where noise may be a nuisance to local residents;

- Any methods to be used that are a function of the season such as minimum frost penetration depth before commencement of winter construction and wet-weather shutdown policies; and

- Project time schedules with reference to the duration of activities such as topsoil stripping, pipe stringing, in-stream activity, the length of trench to be left open, backfilling and restoration.

2.4 Right-of-Way

2.4.1 Acquisition

(i) The applicant should file a plan for acquiring the easements and outline the progress made with landowners. This data should indicate whether or not the easement has been rough staked, the steps taken to inform landowners of the routes studied, the preferred route and the general reaction of local residents to these proposals.

(ii) A copy of any information which has been, or is intended to be, distributed to landowners concerning their rights is also necessary.

2.4.2 Operational Safety

The applicant should report on the special characteristics of the hydrocarbon to be transported or used in the system and the effect on the environment which might result from accidental spills or releases. This should include:

(i) a description of the toxicity, if any, and the probable effect on people or the environment of any releases and treatment for exposure;

(ii) the methods and contingency plans to be used to detect, contain and cleanup mishaps or losses and the notification procedures to ensure quick reaction by the authorities responsible for the protection of the public; and

(iii) a plan for special signing and posting of the easement and if fencing of the right-of-way is planned, a map indicating the proposed locations of the fences. Additional safety factors to be considered are found in section 5.2.

3.0 ROUTE SELECTION

3.1 General Planning Procedures for Route Selection

The environmental concerns of the Ministries and local agencies are identified in this section and section 4.0, Construction which also discusses mitigative options related to the construction phase of the project. It is emphasized however, that the responsibility rests with the applicant to propose the mitigative measures for the project.

When an application is made for looping an existing pipeline, it may be preferable that the loop be located in, or adjacent to, an existing easement. However, the applicant should proceed as if a new route is being selected, given the constraints of existing compressor stations, meter stations and service points. Conditions can exist on looping projects where a change in route is worthwhile: for example, congested rights-of-way, use of new provincial utility corridors and parkway belts, route changes to avoid known archaeological sites and any locations where problems were experienced during previous projects. Deviations that follow property lines, preferably at the rear of the property, should also be considered.

Once the supply locations and delivery points are established, a suitable study area must be delineated. Within the study area, all feasible routes for the pipeline should be identified subject to the constraints of environmental and land use features. These constraints should be described and mapped to a scale of 1:50,000 or larger. Estimates of the cost of various routes including environmental mitigation costs

should be prepared and an economic and technical evaluation of the alternatives conducted. This will normally result in the elimination of some of the alternatives and collection of more detailed environmental data for the remaining routes.

The environmental factors and objectives for the study area should then be ranked in order of priority. The advantages and disadvantages of all routes which have been considered should be reported and options compared. The rationale for selection of the preferred route should be well documented. An environmental constraint map is a useful tool for illustrating the route selection rationale.

In evaluating these routes, the potential effects on the human and natural environment should be considered, as well as mitigative measures which may differentiate routes with essentially the same environmental constraints.

A preferred route will normally evolve from this selection process; an alternate method of route selection may be used if it can be justified.

3.2 Agricultural Lands

The use of food land for pipelines and related facilities should be minimized. It is recognized that other uses, including pipelines, cannot avoid all agricultural land.

Accordingly, the use of the lowest capability agricultural land is preferred for optimum route selection. The applicant is referred to the "Canada Land Inventory

Soil Capability System" from which alternate locations on the less productive agricultural lands, CLI soil capability classes 4-7, may be identified. If these locations were considered unsuitable, the reasons why they were rejected should be outlined. Where necessary, a soil survey should be carried out within the study area.

The following criteria should be considered when selecting a route through agricultural land.

3.2.1 Prime agricultural lands, generally considered as Classes 1-3 in the CLI capability classification and specialty crop lands should be avoided. The AGF representative on the OPCC should be consulted as early as possible when considering a route through specialty crop land.

3.2.2 Where it is essential that the route must traverse prime agricultural lands, every effort must be made to parallel property lines and other rights-of-way. Diagonal field severances should be avoided.

3.2.3 Where a pipeline must pass through agricultural land, every attempt must be made to ascertain the location and extent of existing and planned tile drainage systems. Agricultural land that is extensively tile drained should be avoided.

3.3 Archaeological and Man-Made Heritage Sites

Potential and existing archaeological sites within the study area must be identified. The applicant is advised to contact the Regional Archaeologist from the

Ministry of Citizenship and Culture for information regarding local archaeological sites.

3.3.1 Areas of possible archaeological or heritage value should be avoided. It is important to identify any such known or possible areas before selecting a preferred route. This usually requires document and terrain analysis, hypothesis development, soil sampling, surface collection, test excavation and data analysis. An archaeological survey requires a licence under the Ontario Heritage Act, 1974.

3.3.2 If the proposed route traverses any potential heritage or archaeological areas, it will be necessary for the applicant to file a report describing proposals to avoid or mitigate any adverse effects of construction and plans for protecting and reporting any material discovered.

3.4 Forest and Flora

3.4.1 In heavily forested areas and areas with rare and endangered species, the local offices of the Ministry of Natural Resources should be consulted as early as possible to discuss routing.

3.4.2 Seed production stands should be avoided. Where this is not possible, early consultation with the Regional Forester is advisable.

3.4.3 Designated forest areas, such as Woodlot Improvement Areas and Agreement Forests, should be avoided. Early consultation with the Regional Forester will minimize impacts on these areas.

3.4.4 To avoid clear cutting, the route should follow the interface between woodlands and cleared lands.

3.5 Geological Features and Mineral Resources

3.5.1 Existing and planned pits, quarries, aggregate deposits, mines and mineral deposits including oil and gas fields, peat deposits and designated gas storage areas should be avoided.

3.5.2 Northern Ontario Engineering Geology Terrain Study (NOEGTS) maps, Aggregate Resource Inventory Papers (ARIP) series and Mineral Potential maps, available from the Ministry of Natural Resources, are valuable guides relating to mineral evaluations.

3.5.3 Sites of unusual or significant geological features such as landforms, geological type sections or palaeontological or fossil localities should be avoided.

3.6 Land Use Planning Considerations

The Environmental Report should discuss the impacts of the proposal on land use planning in Ontario. Therefore, the applicant is encouraged to contact the Ministry of Municipal Affairs and Housing (MAH) representative on the OPCC as well as the upper tier (county or regional) and local municipal governments. In this way, provincial and municipal land use planning concerns and longer term land use issues which may affect routing will be identified.

3.6.1 The Planning Act, 1983 defines general areas of Provincial interest which are the responsibility of the Minister of Municipal Affairs and Housing. Section 3 of the Act allows the Minister, either alone or with another Minister(s) to issue specific policy statements which have been approved by Cabinet on matters of provincial interest. Accordingly, where these statements exist and are relevant to a proposed pipeline, the relationship should be addressed in the Environmental Report. The MAH should be contacted through the OPCC for advice on the application and interpretation of these statements.

3.6.2 The relevant municipal and regional official plan(s) should be reviewed, as areas designated for future development or other uses by the plan(s) may eliminate some alternate routes. In northern Ontario, there are joint official plans which apply to unorganized territory; these should be reviewed where they affect alternate routes under consideration.

3.6.3 In addition to the official plan, municipal zoning by-laws should be reviewed to identify those land uses which may have an impact on route selection. Also, if there is a minister's zoning order in place, this should be reviewed.

3.6.4 A further constraint to the selection of a route may be a plan of subdivision which has been either submitted for approval, received draft approval with conditions, or has received final approval. The MAH can advise applicants if alternate routes are affected by a plan of subdivision. However,

the authority to approve such plans has been delegated to most regional municipalities. If a route is being considered in these areas, contact with regional staff should provide any necessary information.

3.6.5 A final constraint in route selection may be that the municipality is conducting a special study in the area of an alternate route, the outcome of which might affect one or more alternatives. Therefore, early contact with municipalities is encouraged.

3.6.6 In choosing a route, consideration should be given to the possibility of creating lots which may be difficult to develop due to the existence of other rights-of-way or the size and shape of the remaining lot(s).

3.6.7 Where a pipeline passes through Crown Land, the applicant is advised to contact the District Office of the Ministry of Natural Resources, as soon as possible after route selection, to apply for a disposition for the use of Crown Land for pipeline installation and operation purposes.

3.7 Parks and Areas of Outdoor Recreation and Education

3.7.1 Approval of the MNR is necessary for a pipeline passing through any class of Provincial Park or Park Reserve or corresponding Park Zones. At Waterway Parks and Provincial Parks located along waterways, site-specific restoration plans may be required to screen the ROW from the waterway. This could prove to be a constraint in route

selection. The MNR District Office must be consulted to determine site specific restoration requirements.

3.7.2 Areas of important recreational potential should be avoided. This would include all known areas used for the purpose of organized outdoor education. Local naturalist clubs and conservation groups are an important information source for locating these areas.

3.8 Watercourse Crossings and Lakes

The potential impacts of pipeline construction on important and sensitive waterbodies are significant considerations in the siting of the preferred pipeline alignment. A number of characteristics related to watercourses will determine the preferred route. Since the perfect crossing location that satisfies all of the following factors is often not possible, the applicant is expected to outline the routing criteria and rationale used to choose the final crossing location. Consideration should be given to the following features within the study area.

3.8.1 The number of water crossings of significant waterbodies should be minimized in selecting the preferred route. The headwaters of the watershed should be avoided as well as groundwater recharge areas and spring sources.

3.8.2 Crossing locations should be chosen that minimize any effects on downstream uses, such as water supply intakes. Crossing locations should also avoid adversely impacting critical fish habitat such as spawning beds, migration routes and feeding areas.

3.8.3 In order to minimize bank disturbance, crossing locations that naturally provide a suitable staging area for equipment and materials are desirable to minimize grading and vegetation removal.

3.8.4 The composition and contour of the stream bed and channel in terms of their erosion and deposition equilibrium should also be considered when selecting an appropriate crossing location.

3.8.5 For liquid-hydrocarbon pipelines, the easement should be a minimum of 300 metres from the shoreline of any lake set aside for recreational purposes. The MNR should be consulted regarding buffer strips between the pipeline and watercourses.

3.8.6 Crossing locations should be chosen that minimize the amount of blasting. Local water-well records and geophysical survey data can often provide useful information on subsurface conditions to be encountered.

3.9 Wildlife

The route should avoid existing deer and moose wintering yards. Wetland areas used as feeding, breeding or staging areas by migratory waterfowl or as a habitat for fur-bearing animals should be avoided. Provincial Wildlife Areas and Crown Game preserves require routing approval by MNR. Locations of these areas are available at local MNR offices.

4.0 CONSTRUCTION

4.1 Inspection

The OEB will appoint a representative to inspect and ensure compliance with the terms and conditions of any OEB order. The OEB inspector may consult with property owners to ensure their satisfaction with the construction. The OEB inspector will notify the Chief Inspector upon arrival at the site. If a non compliance or problem area is observed, the OEB inspector will verbally notify the Chief Inspector; written confirmation by the OEB inspector of any recommendations or agreements will follow.

It is expected that the applicant will appoint an environmental inspector to each pipeline construction spread. This inspector should be well acquainted with the environmental material filed by the applicant, the notification requirements for various activities and conditions of the Ontario Energy Board Order.

To facilitate attendance of Ontario representatives at hydrostatic tests, and other critical activities, the applicant shall give the OPCC seven days prior notice of the time of the activity and confirmation of the time one day in advance. Changes or modifications to the applicant's schedule shall be relayed by telephone or telegram to the OPCC as soon as such changes are known and, in any event, not less than two days prior to the commencement of the event. Minor changes such as the substitution of one form of stabilization for another, can be accommodated in the field. These changes must be approved by the environmental inspector as being capable of achieving the same environmental

management goals. The notification requirements are subject to any order or directive issued by the OEB, which shall take precedence.

4.2 Access and Fencing

4.2.1 Prior to construction, the applicant must consult with the landowner when determining access routes to the easement. In addition, during all phases of construction, access must be provided across the easement for normal movements of farm equipment and animals.

4.2.2 Wire fences should be properly braced before cutting to avoid damaging sections of fence off the ROW. Any fences removed or damaged must be replaced or repaired to their original condition. Temporary fencing of the trench or ROW may be necessary for the safety of people and animals.

4.3 Clearing, Grading and Blasting

4.3.1 Plans for clearing and rough grading of the easement must be in accordance with the procedures of the MNR for Crown land or the reasonable desires of the landowner.

4.3.2 Blasting should be controlled and timed by licensed blasting personnel to minimize adverse effects on local residents, water wells, buildings, soils and wildlife.

4.3.3 All work should be confined to the easement. If it is necessary to work off an easement, temporary working space must be acquired through negotiation

with the landowner. Traffic on and adjacent to the ROW should be minimized during excessively wet weather.

4.4 Roads and Camps

4.4.1 In Fire Districts designated in The Forest Fires Prevention Act, R.S.O. 1980, the construction of all permanent and/or temporary roads and camps located off the ROW must be authorized up to Latitude 54°N by a separate work permit obtained from the MNR District Manager. Construction north of latitude 54°N will require approval by letter or other tenure document under the Public Lands Act, R.S.O. 1980, for all camps or improvements on public lands.

4.4.2 Any construction road not required after construction is to be closed by the applicant, and left in a condition acceptable to the MNR or landowner. The applicant must maintain any access roads necessary for the security of the pipeline.

4.4.3 The applicant shall be responsible for all additional costs of reconstructing the pipeline to conform to the requirements for all present and future road crossings which are on Crown or public lands being managed under agreement with the Province of Ontario.

4.4.4 Any areas to be used for fuel and chemical storage must be dyked with impermeable material with sufficient enclosed volume to hold tank contents + 20% and located and sloped away from waterways.

4.5 Equipment Fueling, Noise and Dust Control

4.5.1 Fueling

Fueling and maintenance should be carried out in such a manner and with such precautions as to avoid contamination of the water table, soil and watercourses.

Fuel storage and maintenance of equipment shall not be undertaken in or adjacent to watercourses. Fueling may be allowed within 30 metres of a waterway at the discretion of the Chief Inspector when hoses are equipped with an acceptable non-spilling attachment.

The contractor shall plan and review fueling sites with the Environmental Inspector, including procedures for the interception and clean up of spills as guided by the spills provisions in the Environmental Protection Act, R.S.O. 1980. Disposal of such wastes should be in accordance with the requirements of the MOE and MNR.

4.5.2 An assessment of possible noise emission problems and a proposal for mitigation is required near residential or other sensitive areas. In addition, a proposal to mitigate significant acoustical changes from ambient conditions is required. Suitable noise attenuation devices should be installed at pump and compressor stations where necessary. All equipment should be equipped with mufflers to minimize noise levels during construction in accordance with MOE requirements.

4.5.3 The applicant should plan dust-control procedures to minimize wind erosion. The local-roads department often has standard specifications for dust control. The appropriate authorities should be consulted for application amounts and types of dust retardant. The value of some specialty crops is reduced when dust is deposited on the crop. Periodic watering of the easement will be necessary in these areas.

4.6 Landscape Protection

4.6.1 Landscape features including trees, shrubs and ground vegetation should be protected, especially when requested by landowners or tenants. Suitable measures such as protection of tree roots within the dripline, treatment with tree paint of any damaged branches or roots, protection of trees with earth, gravel fill, or fencing, transplanting of vegetation and boring under specimen trees should be considered.

4.6.2 Care should be taken in planning site drainage in order to minimize erosion and unnecessary damage to vegetation. Natural channels, settling ponds and existing vegetation should be used as a filter during dewatering to minimize siltation in waterways.

4.6.3 Water Wells

Before, during and after construction, a water level and water quality survey of wells near the pipeline should be planned in conjunction with the MOE Regional Office. A basic procedure should be

developed to provide emergency water for people and livestock in the event of interruption of supply.

4.7 Soil and Drain Protection

4.7.1 Soils

(i) Stockpiled soil should be located away from watercourses. If this is not possible, straw bales and plastic sheets should be used to contain and stabilize these soils to prevent siltation of the watercourse.

(ii) To minimize the adverse effect of construction on the agricultural productivity of the land, the applicant, prior to trenching, should remove topsoil along the trench area and under the subsoil storage area, stockpile it separately from subsoil and replace it on completion of construction. In areas of highly contrasting soil textures, such as sand overburdens on clay, three soil piles should be considered, one for topsoil and two for subsoil. If requested by the landowner, similar procedures should be used for the entire easement.

(iii) On well-drained mineral soil, topsoil should be stripped by colour, not by a predetermined depth, to ensure a minimum of mixing of subsoil and topsoil. However, on some poorly-drained soils which contain a high percentage of organic matter and on organic soils, it may be necessary to strip to a pre-determined depth.

(iv) It is recommended that a topsoil inspector be present at all times during stripping to exercise control over this operation. Inspection is also necessary during excavation and backfilling to avoid topsoil-subsoil mixing. Upon the request of the landowner, the applicant will remove excess subsoil resulting from construction, after making adequate provision for normal subsidence.

(v) Topsoil-subsoil mixing and compaction are impacts that can be minimized. It is therefore the responsibility of the applicant to acquire baseline data (i.e. soil-mapping units and their properties such as horizon depths, organic-matter content, etc.) for the route chosen and to propose suitable construction procedures to minimize soil damage. Procedures such as chisel ploughing, subsoiling, fertilization, heavy mulching and the use of soil building cover crops should be considered.

(vi) The most adverse impacts of construction occur at high soil moisture levels. Consequently construction during the driest period of the year is desirable. A formal wet-weather shutdown policy is required to minimize adverse impacts on soil productivity.

4.7.2 Drains

(i) Consultation with the landowner prior to construction regarding the location of existing and planned tile drains is expected. The depth of the proposed pipeline should be compatible with existing and planned drainage systems and noted on the Grant of Easement form.

(ii) Tile drains that are cut during the trenching operation must be flagged and suitably plugged to prevent the entry of foreign material into the drainage system. Plans for the maintenance of surface and subsurface drainage during the construction period are required.

(iii) Following construction, the applicant shall repair or replace tile drains damaged or disrupted by construction procedures or operations connected with the pipeline. It is recommended that licensed tiling contractors be used for this work. Where the number of tile drains crossing the pipeline trench or their angle of crossing makes individual repair difficult, the installation of headers (sub mains) is desirable.

(iv) All open drainage ditches should be restored utilizing appropriate soil stabilization procedures. A concrete slab should be installed over the pipeline to avoid damage resulting from clearing, widening, or deepening of municipal drains.

>.8 Forest Protection

4.8.1 Merchantable wood must be utilized, where possible, in pipeline construction unless otherwise directed. The Applicant is referred to the Crown Timber Act, R.S.O. 1980.

4.8.2 When passing through woodlots or forests, a designated maximum slash width should be established in consultation with the landowner or MNR prior to commencing construction. A restricted easement width is often a feasible alternative when passing through valuable woodlots.

4.8.3 Merchantable timber cut during clearing operations must be cut in standard lengths and piled in locations from which it can be hauled readily unless other arrangements are made with the owner.

4.8.4 Loss of topsoil can be avoided when tree stumps or boulders are removed from the easement. A brush blade on a bulldozer minimizes topsoil loss.

4.8.5 Slash must be burned, chipped or disposed of to the satisfaction of the MNR or landowner. The slash should be piled for burning at least 10 metres from the edge of the standing timber.

4.8.6 In the MNR designated Fire Districts, no burning may take place from April 1 to October 31 except under authority of a burning permit obtained from the MNR in accordance with the Forest Fires Prevention Act, R.S.O. 1980.

4.8.7 All burning shall be subject to the air quality standards set by the MOE. It will be the responsibility of the pipeline company to obtain approval from the MOE for any burning that may impair air quality.

4.8.8 On Crown land, no disposal of materials (e.g., push-outs) adjacent to the pipeline easement will be permitted unless otherwise approved by the MNR.

4.9 Fish and Wildlife

4.9.1 On the pipeline ROW at locations designated by local MNR offices, areas of grasses, forbs and shrubs should be maintained for wildlife management purposes as well as for screening at the banks and edges of watercourses.

4.9.2 Pesticide spraying over designated nesting sites, headwaters and water courses is not permitted.

4.9.3 Pipeline construction should avoid interference with areas of high-quality, wildlife-oriented recreation (hunting and viewing). Construction must not interfere with the spawning and migration of fish.

4.9.4 Where a pipeline is constructed through forested wetlands, access and drainage across the trench must be maintained.

4.10 Crossings of Lakes and Watercourses

Crossings of lakes and watercourses can cause serious problems of bank erosion, disturbance of heritage and archaeological resources, siltation, interference with

fish and wildlife, and impairment of downstream water quality if not properly planned. It is the intention of these guidelines that water crossings be constructed to minimize any increase in downstream siltation and to minimize any deleterious effects on the water quality or quantity for downstream uses.

It is essential that each crossing identified by MNR or MOE as sensitive be reviewed on the site with the relevant Ministry representatives. A sensitive crossing designation can be applied if there is any indication that water use will be adversely affected by the short and/or long-term impacts of the crossing. A site specific construction plan should be prepared for sensitive water crossings. The site plan should outline alternative crossing procedures where applicable, special mitigative techniques, time duration of each activity, and the monitoring program to be implemented before, during and after construction. Local weather offices should be contacted to avoid unexpected high water flows resulting from regional weather disturbances.

All waterway crossings shall be subject to the Navigable Waters Protection Act (Canada), the Fisheries Act (Canada), the Lakes and Rivers Improvement Act, R.S.O. 1980 and the Conservation Authority Act, R.S.O. 1980.

The following procedures should be considered to minimize water crossing impacts:

4.10.1 Comprehensive pre-construction investigations are necessary in areas where sensitive materials such as Leda clay are likely to be encountered. Construction techniques and schedules must be modified according to the sensitive materials found.

4.10.2 To avoid unnecessary siltation of the waterbody, earthplugs should be left in the banks until in-stream excavation is to begin. The clearing of vegetation on slopes and banks of the watercourse should be delayed until just prior to the arrival of pipe and equipment for the crossing. The time sequence of activities from clearing of banks to final restoration must be noted on site plans.

4.10.3 The bank trench should be excavated and the spoil placed safely away from the bank and protected to avoid unnecessary siltation. For most inland watercourses, all trench spoils must be placed onshore unless the appropriate agency (i.e. MNR, MOE) approves in-stream disposal.

4.10.4 The river crossing may be done by either "wet" or "dry" procedures depending on the sensitivity of the waterbody, size and flow, the stability of the bank and which technique causes the least impact on water quality. All factors should be reviewed; the rationale for selection of a wet or dry crossing must be outlined. Where topography and soil conditions are suitable, a bored crossing is the preferred technique.

The applicant is required to demonstrate that the technique selected minimizes adverse impacts. This will not be achieved without identifying a site specific monitoring program for sensitive water crossings. See section 5.3, Monitoring.

4.10.5 Completion of the river crossing, including backfilling and restoration, should be achieved in the minimum possible time. Mitigative procedures to

stabilize the banks, even if temporary, should be instituted immediately after stream bed back-filling to protect the banks against surface run-off. The banks should be recontoured to their original shape unless otherwise approved. Breakers (anti-seep collars) may be necessary on long or steep slopes to impede subsurface drainage and associated erosion problems. Maximum time limits for completion of these activities must be stated and the in-stream duration time specified.

4.10.6 The Chairman of the OPCC and local MOE and MNR representatives must be notified, seven days in advance, with verbal confirmation one day in advance, of the schedule and selected method when alternatives are designated, for each crossing of a watercourse or body of water.

4.10.7 Timing of construction should avoid interference with fish migration, spawning or egg incubation. Aquatic plants uprooted or cut prior to or during trenching operations should be contained and deposited on land to avoid adverse downstream effects.

4.10.8 Highly organic stream-bed material should not be returned to the stream; it should be replaced by granular material and be on site prior to trenching to cover the pipe as soon as it is laid across the water course. Gravel backfill should be restricted to excavation in the stream bed to avoid creation of an artificial drain from the on-shore trench to the river-bed trench. The

applicant should consult with the MNR District Office for locations that require granular backfill.

4.10.9 There should be no blasting in or adjacent to watercourse beds during fish migration, spawning or egg incubation. Devices such as bubblers should be used to minimize the impact of blasting in water bodies at other times.

4.10.10 Wherever temporary weirs, coffer dams or diversions are used at water crossings to form settling basins or to facilitate trenching, adequate stream flow must be maintained for downstream water uses. The materials, design and location of these modifications are to be indicated on site plans and approved by the MNR District Office. Stream diversions should only be used when no feasible alternatives exist. Local MNR and MOE approval is required for any planned diversions.

4.10.11 Final stream channel cleanup must include removal of any temporary structures, reshaping of the stream to the original or an approved configuration, and removal of all construction material and debris.

4.10.12 Construction operations should be timed to avoid recreational lakes or rivers during peak-use periods. The MNR District Office should be contacted regarding peak-use periods.

4.10.13 To avoid disruption of the bed and the deposition of grease or oil in water, vehicles should not travel along the bed of a watercourse. All

in-stream construction activity, including fording, should be kept to a minimum and specified on the site plan.

4.11 Hydrostatic Testing

A water-taking permit is required from the MOE Regional Office six weeks in advance of any hydrostatic test for the taking of water from surface or ground sources in excess of 50,000 litres/day. The Applicant must ensure that the rate of filling the pipeline from surface sources does not interfere with downstream uses or with the natural functions of the stream. A permit may be refused, delayed, or proportionately reduced during low-flow stages.

Dewatering of the pipeline should be done at a rate not exceeding the rate of withdrawal from the source. In addition, an energy dissipator must be installed to minimize any erosion during discharge. The MOE may require that discharge water be sampled to ensure that it is substantially the same as the water withdrawn. Other special measures may be required to dispose of poor-quality discharge water such as the first and last slug of the discharge.

Pumps and heaters should not be located directly adjacent to a watercourse. To prevent soil or water contamination, a retaining berm should be constructed around the equipment and a suitably sized polyethylene sheeting installed under the equipment to collect any spills or leaks.

4.12 Restoration

It is the responsibility of the applicant to ensure that, over a reasonable period of time, the easement is rehabilitated to the satisfaction of the landowner and the Ministries concerned. Good restoration procedures should be implemented promptly during and following construction to limit impact.

To achieve this, it is essential that a restoration plan be developed to rehabilitate the easement. This plan should be included in the Environmental Report and put into effect immediately after construction is completed in a particular area. Inclement weather or an approaching wet season may indicate a need for temporary action. A contingency restoration plan should be developed to mitigate environmental problems during bad weather. For example, it may be advisable to rip rap river banks and firmly place straw bale barriers in areas where surface runoff could enter the watercourse.

It is recognized that there are well known procedures to alleviate construction impacts; these have been demonstrated by various applicants and documented in standard plans for typical river crossings and other sensitive areas. Standard procedures include use of diversion berms, contouring of slopes, mulching and suitable fertilizer applications. In developing a restoration plan, where there is potential for a major construction problem or where standard construction procedures may not be sufficient, a site specific program should be developed, and included for review in the Environmental Report.

The applicant should consult with the landowner and comply with any reasonable request regarding rehabilitation of the easement. Planting of soil building cover crops should be considered. Arrangements for the landowner to do his own rehabilitation often result in poor quality restoration and problems in subsequent years and are not recommended.

5.0 ECONOMIC, SOCIAL AND SAFETY CONSIDERATIONS

These guidelines are primarily concerned with the effect of a pipeline project on the environmental resources of Ontario. A project may also affect the economy, safety and social future of communities.

5.1 Economic and Social Considerations

The applicant should provide, as appropriate:

(i) A description of the area affected, including the employment characteristics of the local population, and average income.

(ii) An assessment as to how the project will affect the area concerned in such matters as employment, accommodation facilities, municipal tax revenues and other related impacts.

(iii) A statement of the applicant's proposals regarding the correction or mitigation of any impacts of the project, which may appear to be negative.

5.2 Safety Considerations

The applicant is referred to the Fuels Safety Branch of the Ministry of Consumer and Commercial Relations for any additional concerns.

5.2.1 A list of the material to be carried by the pipeline should be filed and the procedures which the applicant will implement to ensure that the public and the appropriate local authorities, including

police and fire departments, are aware of any special hazards. In particular, high-vapour-pressure petroleum liquid products such as propane and butane may require special training of local firemen. In urban or developing municipal areas, suitable signs should be prominently displayed, where the material transported can present special hazards.

Technical information relative to class location, design factor, maximum allowable operating pressure, test medium and pressure and specifications for pipe, valves and flanges must be filed with the application.

5.2.2 Municipal Considerations

Where the proposed pipeline passes through areas of active municipal development, consideration should be given to fencing of the right-of-way and noted in the application. All such pipelines will require clear, prominent signs so that land developers and residents are aware of its existence.

5.2.3 Disposal of Waste

At the time of application, plans should be filed with the OEB covering the disposal of all waste materials such as lubricating oils, product spills, urethane breakers and paints or additives used in the pipeline system. The chemical composition and possible toxicity of all such materials must be identified.

5.3 Monitoring

To ensure that the easement is returned to pre-construction conditions as soon as possible, the OEB often requests monitoring reports following construction to determine the success of the restoration effort. In the event of a conflict between the following requirements and the condition of any OEB Order, the OEB Order shall prevail.

5.3.1 For larger-diameter, higher-pressure, cross-country transmission lines, two reports are usually required.

(i) An "Interim Monitoring Report" due within six weeks after final tie-ins should describe the implementation of mitigative measures recommended in the Environmental Report. This report should also outline any changes in construction or restoration procedures that took place during the project. Effects noted during construction and the actions taken or to be taken to mitigate long-term effects of construction on the environment should also be noted. Any outstanding landowner concerns and special restoration measures undertaken as a result of landowner requests should be noted.

(ii) A "Final Monitoring Report" is usually required prior to November 1 following the first complete growing season after construction. The final report should describe the condition of the rehabilitated right-of-way and actions taken subsequent to the interim

report. The results of any monitoring programs and analyses such as soil, water sampling, etc., should also be reported and recommendations made as appropriate (See section 5.3.3). A breakdown of environmental costs incurred for the authorized project may also be required. In particular, items of cost associated with specific environmental measures should be delineated and identified as pre-construction, construction or restoration related.

5.3.2 For smaller-diameter, lower-pressure transmission pipelines within existing rights-of-way a "Post Construction Summary" is required. This summary should outline the success of restoration, any outstanding landowner concerns and deviations from the original plans.

5.3.3 Monitoring programs may be required for sensitive water crossings and soil productivity. The objective of a monitoring program is to establish quantitative data for the assessment of impacts and to recommend methods of mitigating similar impacts on future projects. The onus is on the applicant to establish monitoring programs that will meet the above objectives to the satisfaction of the governing authority. Consequently, a monitoring program outline should be included with the Environmental Report.

APPENDIX I
Some Legislation Applicable to Pipeline Construction Projects in Ontario

PROVINCIAL ACT	GENERAL APPLICATION NB Provincial laws may not apply to federally regulated pipelines (interprovincial or international)
Conservation Authorities Act R.S.O. 1980, c. 85	Authorizes establishment of conservation authorities with power to: - own and control land in a watershed (s. 21). - divert any pipe (s.21) - regulate construction in a watercourse, swamp, or area susceptible to flooding (s.28)
Construction Lien Act, 1983 S.O. 1983, c. 6 (effective April 2, 1983)	Revises previous Mechanics' Lien Act. Provides system of liens, trusts and holdbacks to protect financial interests of contractors, sub-contractors, suppliers and workmen on any construction project.
Crown Timber Act R.S.O. 1980, c. 126	Minister of Natural Resources may issue licences authorizing the cutting of trees on Crown land.
Drainage Act R.S.O. 1980, c. 126	Provides for construction of drainage works. Pipes that are more easily maintained as a result may be charged part of the cost (s.22).
Employment Standards Act R.S.O. 1980, c. 137	Standards for construction and other employees re: hours of work, overtime, vacation pay, etc.
Endangered Species Act R.S.O. 1980, c. 138	Prohibits interference with the habitat of endangered flora or fauna (s.5).

PROVINCIAL ACT	GENERAL APPLICATION
Energy Act R.S.O. 1980, c. 139	Incorporates and amends C.S.A. Standards for pipeline safety. Provides for inspectors, reporting of accidents, examination of pipelines before use, licensing, record keeping, procedures for locating pipelines, etc.
Environmental Assessment Act R.S.O. 1980, c. 140	Requires environmental assessments of undertakings by public bodies (s.5). Can affect pipes on land or easements owned by public bodies (e.g. Ontario Hydro).
Environmental Protection Act R.S.O. 1980, c. 141	Prohibits pollution, including discharge of contaminants and litter. Construction of anything which may result in pollution requires prior certificate of approval (Part II). Provides for control orders and stop orders (Part X).
Expropriations Act R.S.O. 1980, c. 148	Provides procedure for expropriating land, determining compensation.
Fire Marshall Act R.S.O. 1980, c. 166	Fire Marshall may make rules for the use, storage and handling of explosives and volatile compounds (s.20).
Forest Fires Prevention Act R.S.O. 1980, c. 173	Requires permits to: - start fires April to October - clear land - travel in restricted fire zones Prohibits smoking in a forest. Applies only to designated fire regions.

PROVINCIAL ACT	GENERAL APPLICATION
Labour Relations Act R.S.O. 1980, c. 228	General provisions re labour relations, collective bargaining. On pipeline construction, trade unions are not required to prove 55% membership as a condition of a closed shop (s.46(4)d).
Lakes and Rivers Improvement Act R.S.O. 1980, c. 229	Requires approval of Minister of Natural Resources before construction of a dam, diversion work, channelization or any other activity which alters the flow and/or water levels in a lake or river.
Mining Act R.S.O. 1980, c. 268	Lieutenant Governor in Council may authorize transmission of energy through mining lands (s.191).
Municipal Act R.S.O. 1980, c. 302	Municipalities may pass by-laws authorizing the construction of pipes on public highways (s.210(112)).
Occupational Health and Safety Act R.S.O. 1980, c. 321	Establishes standards and procedures for employee safety in construction projects and other workplaces.
Ontario Energy Board Act R.S.O. 1980, c. 332	Requires Board leave before constructing a transmission line (s.46). Board can authorize expropriation (s.49) and use of highways and utility easements (s.510 for any line.
Ontario Heritage Act R.S.O. 1980, c. 337	Requires a permit to excavate or alter property of archaeological or historical significance (Part VI). Minister of Citizenship and Culture can issue temporary stop orders (s.62).

PROVINCIAL ACT	GENERAL APPLICATION
Ontario Human Rights Code R.S.O. 1980, c. 340	Prohibits discrimination in employment, etc.
Ontario Water Resources Act R.S.O. 1980, c. 361	Prohibits impairment of water quality (s.16). Requires permit to take water (s.20).
Planning Act R.S.O. 1980, c. 379, S.O. 1981, c. 15 (to be replaced by Planning Act, 1983, S.O. 1983, c. 1, to be proclaimed)	Provides for official plans and zoning by-laws to control land use. However, official plans do not control transmission lines approved by the OEB. Provides for subdivision control, which also does not apply to gas pipelines.
Pesticides Act R.S.O. 1980, c. 376	Requires a permit before using a pesticide (s.7). Provides for control orders and stop orders (s.20, 21).
Pits and Quarries Control Act R.S.O. 1980, c. 378	Requires a licence to operate a pit or quarry (s.4).
Provincial Parks Act R.S.O. 1980, c. 401	Regulates use of land in provincial parks (s.21). Licence of occupation required (Reg. 822).
Public Lands Act R.S.O. 1980, c. 413	Minister of Natural Resources may grant easements (s.20) or licences to occupy public lands (s.19). Public lands may also be sold or leased (s.15). In areas without municipal organization, building permits may be required (s.13).

PROVINCIAL ACT	GENERAL APPLICATION
Public Utilities Act R.S.O. 1980, c. 423	Requires authorizing by-law before construction (s.57). Authorizes pipes within buildings (s.21 to 24). Prohibits interference with pipes or meters, or waste of any public utility (s.13). Requires service to any buildings on land lying along the pipe (s.54).
Topsoil Preservation Act R.S.O. 1980, c. 504	Permits municipalities to pass by-laws regulating the removal of topsoil. Does not apply if leave to construct has been obtained from OEB, or if the topsoil will be held and replaced.
Trees Act R.S.O. 1980, c. 510	Permits municipalities to pass by-laws regulating the cutting of trees. Does not apply if a building permit has been obtained, or if tree cutting is necessary to make a survey.
Weed Control Act R.S.O. 1980, c. 530	Provides for destruction of prescribed "noxious weeds".
Workmen's Compensation Act R.S.O. 1980, c. 539, S.O. 1981, c. 30, S.O. 1982, c. 61	Provides compensation system for injured workers and their dependents.

FEDERAL ACT	GENERAL APPLICATION NB Federal statutes generally apply primarily to inter-provincial and international pipelines
Canada Water Act R.S.C. 1970, (1st Supp.), c. 5	Prohibits deposition of waste in federally regulated waters (e.g. harbours). Provides for federal-provincial agreements.
Clean Air Act S.C. 1970-71-72, c. 47	Prohibits air pollution in excess of prescribed standards. Inspector can require prior approval of construction.
Environmental Contaminants Act S.C. 1974-75-76, c. 72	Prohibits willful release of prescribed substances.
Fisheries Act R.S.C. 1970, c F-14, as amended	Stream obstructions may be required to have fishways (s.20). Prohibits pollution of water inhabited by fish (s.33) and the harmful alteration, disruption or destruction of fish habitat (s.31)
Migratory Birds Conservation Act R.S.C. 1970, c. M-12	Prohibits interference with migratory birds and their habitat (applies to all lines)
National Energy Board Act R.S.C. 1970, C. N-6, as amended	Requires NEB leave to construct interprovincial or international pipelines. Extensive jurisdiction re gas exports, tolls, etc.
Navigable Waters Protection Act R.S.C. 1970, c. N-19 PGP	Requires approval of Minister of Transport to all works in or under navigable waters, except a work which does not interfere with navigation.

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